Author Index

Ahlblom, B., 115 Anderson, P. M., III, 93, 267 Aning, K., 23 Arbel, A., 235 Archambault, P., 1 Arieli, A., 47 Ast, D. G., 241

Balasubramanian, N., 199 Barnes, C. R., 261 Beck, G., 1 Bhagat, P. K., 187 Boratto, F. J. M., 97 Bouvaist, J., 1

Caddell, R. M., 189 Chan, K. S., 177 Chevrier, J. C., 1 Curry, D. A., 135

Dele-Dubois, M. L., 59 Doig, P., 77

Flewitt, P. E. J., 77 Fuentes, M., 109

Górecki, T., 225 Guimarães, J. R. C., 55

Hornbogen, E., 145

Iskander, B., 59

Jaensson, B., 169

Kadaba, P. K., 187 Koss, D. A., 177 Krenitsky, D. J., 241

Liebermann, H. H., 203 Lin, F.-S., 65 Lord, A. E., Jr., 93, 267 Lorriaux-Rubbens, A., 59 Ludwiczak, E. A., 247

Minuth, E., 145 Mohamed, F. A., 211 Moore, D. M., 85 Morris, L. R., 85 Mukherjee, A., 47 Murthy, V. R. K., 187

Natan, M., 235 Nickell, W. T., 187

Öström, P., 115

Pabi, S. K., 151 Pai, B. C., 199 Palchan, I., 217 Parker, J. D., 271

Ramachandran, B. E., 199 Ramalingam, S., 101 Ramanathan, L. V., 13 Ramaswami, B., 231 Reed-Hill, R. E., 97 Rios Maria, C., 55 Rosenfield, A. R., 261

Sadananda, K., 159
Sanders, T. H., Jr., 247
Sargent, C. M., 125
Sastry, S. M. L., 231
Sawtell, R. R., 247
Sevillano, J. G., 109
Shahinian, P., 159
Shinozaki, D. M., 125
Smith, E., 35
Stanzl, St., 145
Starke, E. A., Jr., 65

Thompson, A. W., 41 Tien, J. K., 23 Touzain, Ph., 59

Urcola, J. J., 109

Van Houtte, P., 7 Vast, P., 59

Watson, J. D., 101 Wilshire, B., 271 Woodliff, A. R., 189

Zubillaga, J. C., 109

Subject Index

Alloys

see also Metallic glasses

 α - β Ti, fracture toughness of Widmanstatten colonies of, 177

Al-2.8%Li-0.3%Mn sheet, recrystallized, the fracture behaviour of, 247

Fe-Cu, a transmission electron microscopy study of lath martensite habit planes in, 109

Fe-31.9%Ni-0.02%C, the hardness of martensiteaustenite mixtures in, 55

7XXX-type Al, the effect of Cu content and degree of recrystallization on the fatigue resistance of, and fatigue crack propagation, 65

7075, a contribution to the optimization of the heat treatment of, 1

strong Al, the effect of various anodic coatings on the creep behaviour of, 235

structural, the effect of environment on the creep crack growth behaviour of several, 159

superplastic Al sheet, a new, 85

superplastic Ti, factors affecting the maximum attainable ductility in, 47

Ti-6Al-4V, the transition effect in the cyclic temperature creep of, 217

Zircaloy-2, hot-pressed, the influence of diffused C on the structure and oxidation of, 13

Aluminium

a contribution to the optimization of the 7075 heat treatment, 1

on the dissolution kinetics of Si in an Al-rich matrix, 151

effect of Cu content and degree of recrystallization on the fatigue resistance of 7XXX-type Al alloys: fatigue crack propagation, 65

effect of various anodic coatings on the creep behaviour of a strong Al alloy, 235

the fracture behaviour of recrystallized Al-2.8%Li-0.3%Mn sheet, 247

influence of oxidation on the creep behaviour of Al, 211

a new superplastic Al sheet alloy, 85

the transition effect in the cyclic temperature creep of Ti-6Al-4V, 217

Analysis

orientation distribution function, a method of from incomplete pole figures normalized by an iterative method, 7

Anodic coatings

various, the effect of on the creep behaviour of a strong Al alloy, 235

Arrhenius plots

statistical calculations on Arrhenius lines for the diffusion of O and N in group V refractory metals, 97

Boron

the correlation between viscous flow and differential scanning calorimetry measurements at the glass transition in the metallic glass alloy ${\rm Fe_{40}Ni_{40}P_{14}B_6,\ 267}$

Bulk modulus

and shear modulus and Young's modulus for polycrystalline metallic elements, the relations between, 225

Carbon

the hardness of martensite-austenite mixtures in Fe-31.9%Ni-0.02%C, 55

the influence of diffused C on the structure and oxidation of hot-pressed Zircaloy-2, 13

Cement

pulsed nuclear magnetic resonance study of absorbed water in, 187

Chill block melt spinning

the dependence of the geometry of glassy alloy ribbons on the process parameters of, 203

Chromium

influence of microstructure on the localized corrosion behaviour of a 12%Cr-1%Mo ferritic stainless steel, 77

Cleavage fracture toughness

of ferritic steels, predicting the temperature and strain rate dependences of, 135

Coatings

various anodic, the effect of on the creep behaviour of a strong Al alloy, 235

Copper

effect of Cu content and degree of recrystallization on the fatigue resistance of 7XXX-type Al alloys: fatigue crack propagation, 65

the effects of prestrain on the creep and fracture behaviour of polycrystalline Cu, 271

the plastic deformation of [001]-oriented disordered Cu₃Au single crystals, 231

a transmission electron microscopy study of lath martensite habit planes in Fe-Cu alloys, 109

current status of the role of hydrogen in stress corrosion cracking, 41

localized, of a 12%Cr-1%Mo ferritic stainless steel, the influence of microstructure on, 77

Crack arrest in a wire-reinforced polymer composite, 261 Crack growth

creep, of several structural alloys, the effect of environment on, 159

Cracking

stress corrosion, current status of the role of hydrogen in, 41

Cracks

fatigue, the effect of Cu content and degree of recrystallization on the fatigue resistance of 7XXX-type Al alloys, and the propagation of, 65

Crack tip

lattice trapping at a, and the relation between the macroscopic and microscopic thermodynamic surface energies, 35

quantitative analysis of plastic deformation at, by recrystallization, 145

Creep

of Al, the influence of oxidation on, 211 crack growth by, of several structural alloys, the effect of environment on, 159

cyclic temperature, of Ti-6Al-4V, the transition effect in, 217

and fracture of polycrystalline Cu, the effects of prestrain on, 271

and stress rupture of a wrought Ni-base superalloy in air and vacuum, 23

of a strong Al alloy, the effect of various anodic coatings on, 235

Crystallization

temperatures of at different heating rates from isothermal transformation times, exact values for, 93

Cyclic deformation

large strain, of ductile polymers, 125

Deformation

ideal elastic-plastic, in Fe-Ni-based metallic glasses, evidence for, 241

large strain cyclic, of ductile polymers, 125 plastic, at a crack tip, quantitative analysis of by recrystallization, 145

plastic, of [001]-oriented disordered Cu₃Au single crystals, 231

Differential scanning calorimetry

and viscous flow at the glass transition, the correlation between in the metallic glass alloy Fe₄₀-Ni₄₀P₁₄B₆, 267

Diffusion

of O and N in group V refractory metals, statistical calculations on Arrhenius lines for, 97

Dislocation link lengths

model of for strain hardening in stage II of polycrystalline metals of high stacking fault energy, 115

Dissolution

of Si in an Al-rich matrix, kinetics of, 151 Ductility

maximum attainable in a superplastic Ti alloy, factors affecting the, 47

Environment

effect of on the creep crack growth behaviour of several structural alloys, 159

Fatigue

resistance to of 7XXX-type Al alloys, the effect of Cu content and degree of recrystallization on, and fatigue crack propagation, 65

Fluorosulphuric acid

study of graphite-fluorosulphuric acid intercalation compounds by Raman spectrometry, 59

Fracture

and creep of polycrystalline Cu, the effects of prestrain on, 271

of recrystallized Al-2.8%Li-0.3%Mn sheet, 247 Fracture toughness

of Widmanstatten colonies of an α-β Ti alloy, 177

Geometry

of glassy alloy ribbons, the dependence of on the chill block melt-spinning process parameters, 203 Glass transition

in the metallic glass alloy Fe₄₀Ni₄₀P₁₄B₆, the correlation between viscous flow and differential scanning calorimetry measurements at, 267

Gold

the plastic deformation of [001]-oriented disordered Cu₃Au single crystals, 231

Graphite

study of graphite-fluorosulphuric acid intercalation compounds by Raman spectrometry, 59

Group V

refractory metals of, statistical calculations on Arrhenius lines for the diffusion of O and N in, 97

Habit planes

lath martensite, in Fe-Cu alloys, a transmission electron microscopy study of, 109

Hardness

of martensite-austenite mixtures in Fe-31.9%Ni-0.02%C, 55

Heating rates

different, exact values for crystallization temperatures at, from isothermal transformation times, 93

Heat treatment

7075, a contribution to the optimization of, 1 Hydrogen

current status of the role of hydrogen in stress corrosion cracking, 41

Inclusion chemistry control

for machinability enhancement in steels, 101 Intercalation compounds

graphite-fluorosulphuric acid, study of by Raman spectrometry, 59

Iron

the correlation between viscous flow and differential scanning calorimetry measurements at the glass transition in the metallic glass alloy Fe₄₀Ni₄₀P₁₄B₆, 267

evidence for ideal elastic-plastic deformation in Fe-Ni-based metallic glasses, 241

the hardness of martensite-austenite mixtures in Fe-31.9%Ni-0.02%C, 55

a transmission electron microscopy study of lath martensite habit planes in Fe-Cu alloys, 109

Lath martensites

habit planes of in Fe-Cu alloys, a transmission electron microscopy study of, 109

Lattice trapping

crack tip, and the relation between the macroscopic and microscopic thermodynamic surface energies, 35

Lithium

the fracture behaviour of recrystallized Al-2.8%Li-0.3%Mn sheet, 247 Machinability

inclusion chemistry control for the enhancement of in steels, 101

Manganese

the fracture behaviour of recrystallized Al-2.8%Li-0.3%Mn sheet, 247

Metallic glasses

the dependence of the geometry of glassy alloy ribbons on the chill block melt-spinning process parameters, 203

Fe-Ni-based, evidence for ideal elastic-plastic deformation in, 241

Fe₄₀Ni₄₀P₁₄B₆, the correlation between viscous flow and differential scanning calorimetry measurements at the glass transition in, 267

Metals

group V refractory, statistical calculations on Arrhenius lines for the diffusion of O and N in, 97

polycrystalline, of high stacking fault energy, a dislocation link length model for strain hardening in stage II of, 115

the relations between the shear modulus, the bulk modulus and Young's modulus for polycrystalline metallic elements, 225

Microstructure

influence of on the localized corrosion behaviour of a 12%Cr-1%Mo ferritic stainless steel, 77

Molybdenum

influence of microstructure on the localized corrosion behaviour of a 12%Cr-1%Mo ferritic stainless steel, 77

Nickel

the correlation between viscous flow and differential scanning calorimetry measurements at the glass transition in the metallic glass alloy Fe₄₀Ni₄₀P₁₄B₆, 267

creep and stress rupture behaviour of a wrought Ni-base superalloy in air and vacuum, 23

evidence for ideal elastic-plastic deformation in Fe-Ni-based metallic glasses, 241

the hardness of martensite-austenite mixtures in Fe-31.9%Ni-0.02%C, 55

Nitrogen

statistical calculations on Arrhenius lines for the diffusion of O and N in group V refractory metals, 97

Nuclear magnetic resonance

pulsed, study of absorbed water in cement by, 187

Optimization

of the 7075 heat treatment, a contribution to, 1 Orientation distribution function

a method of analysis of from incomplete pole figures normalized by an iterative method, 7 Oxidation

influence of on the creep behaviour of Al, 211 and structure of hot-pressed Zircaloy-2, the influence of diffused C on, 13

Oxygen

statistical calculations on Arrhenius lines for the diffusion of O and N in group V refractory metals, 97

Phosphorus

the correlation between viscous flow and differential scanning calorimetry measurements at the glass transition in the metallic glass alloy Fe₄₀Ni₄₀P₁₄B₆, 267

Pole figures

incomplete, normalized by an iterative method, a method of orientation distribution function analysis from, 7

Polycarbonate

and polypropylene, unoriented and oriented, yield behaviour of as influenced by temperature, 189

Polymers

crack arrest in a wire-reinforced polymer composite, 261

ductile, large strain cyclic deformation of, 125 Polypropylene

and polycarbonate, unoriented and oriented, yield behaviour of as influenced by temperature, 189

Prestrain

the effects of on the creep and fracture behaviour of polycrystalline Cu, 271

Process parameters

chill block melt-spinning, the dependence of the geometry of glassy alloy ribbons on, 203

Raman spectrometry

study of graphite-fluorosulphuric acid intercalation compounds by, 59

Recrystallization

degree of and Cu content, the effect of on the fatigue resistance of 7XXX-type Al alloys: fatigue crack propagation, 65

quantitative analysis of plastic deformation at a crack tip by, 145

Residual stress

a principal distinction between different kinds of X-ray equipment for the measurement of, 169

Shear modulus

and bulk modulus and Young's modulus for polycrystalline metallic elements, the relations between, 225

Silicon

on the dissolution kinetics of Si in an Al-rich matrix, 151

studies on the structural stability of high silica fabric, 199

Single crystals

[001]-oriented disordered Cu₃Au, the plastic deformation of, 231

Stability

structural, of high silica fabric, studies on, 199 Stacking fault energy

high, a dislocation link length model for strain hardening in stage II of polycrystalline metals of, 115

Steels

ferritic, predicting the temperature and strain rate dependences of the cleavage fracture toughness of, 135

inclusion chemistry control for machinability enhancement in, 101

12%Cr-1%Mo ferritic stainless, the influence of microstructure on the localized corrosion behaviour of, 77

Strain hardening

in stage II of polycrystalline metals of high stacking fault energy, a dislocation link length model for, 115

Strain rate

and temperature, predicting the dependences on of the cleavage fracture toughness of ferritic steels, 135

Stress

residual, a principal distinction between different kinds of X-ray equipment for the measurement of, 169

Stress corrosion

cracking by, current status of the role of hydrogen in, 41

Stress rupture

and creep of a wrought Ni-base superalloy in air and vacuum, 23

Structure

of high silica fabric, studies on the stability of, 199 and oxidation of hot-pressed Zircaloy-2, the influence of diffused C on, 13

Surface energy

crack tip lattice trapping and the relation between the macroscopic and microscopic thermodynamic surface energies, 35

Temperature

crystallization, at different heating rates from isothermal transformation times, exact values for, 93

and strain rate, predicting the dependences on of the cleavage fracture toughness of ferritic steels, 135

yield behaviour of unoriented and oriented polycarbonate and polypropylene as influenced by, 189

Titanium

factors affecting the maximum attainable ductility in a superplastic Ti alloy, 47

fracture toughness of Widmanstatten colonies of an α - β Ti alloy, 177

the transition effect in the cyclic temperature creep of Ti-6Al-4V, 217

Toughness

cleavage fracture, of ferritic steels, predicting the temperature and strain rate dependences of, 135

fracture, of Widmanstatten colonies of an α - β Ti alloy, 177

Transformation times

isothermal, exact values for crystallization temperatures at different heating rates from, 93

Transition

in the cyclic temperature creep of Ti-6Al-4V, 217

Transmission electron microscopy

study of lath martensite habit planes in Fe-Cu alloys by, 109

Trapping

crack tip lattice, and the relation between the macroscopic and microscopic thermodynamic surface energies, 35

Vanadium

the transition effect in the cyclic temperature creep of Ti-6Al-4V, 217

Viscous flow

and differential scanning calorimetry measurements at the glass transition, the correlation between in the metallic glass alloy Fe₄₀Ni₄₀-P₁₄B₆, 267

Water

absorbed, in cement, pulsed nuclear magnetic resonance study of, 187

Widmanstatten colonies

of an α - β Ti alloy, fracture toughness of, 177

X-ray equipment

for residual stress measurement, a principal distinction between different kinds of, 169

Yield

of unoriented and oriented polycarbonate and polypropylene as influenced by temperature, 189

Young's modulus

and shear modulus and bulk modulus for polycrystalline metallic elements, the relations between, 225

Zircaloy-2

the influence of diffused C on the structure and oxidation of hot-pressed Zircaloy-2, 13

